



Jones County Board of Commissioners
P.O. Box 1359
Gray, GA 31032
(478) 986-6405

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INVITATION TO BID

Water Treatment Chemicals

Issue Date: Wednesday, May 22, 2019

JONES COUNTY BOARD OF COMMISSIONERS
166 INDUSTRIAL BLVD./P.O. BOX 1359
GRAY, GA 31032
PHONE: (478) 986-6405
ATTN: JASON RIZNER, COUNTY ADMINISTRATOR
[**jason.rizner@jonescountyga.org**](mailto:jason.rizner@jonescountyga.org)

BIDS WILL BE RECEIVED UNTIL JUNE 19, 2019 AT 3:00 P.M.

PROPOSALS ARE TO BE SEALED AND MAILED VIA USPS, FEDEX OR UPS TO THE ABOVE ADDRESS OR HAND DELIVERED TO THE COUNTY ADMINISTRATOR'S OFFICE LOCATED IN THE JONES COUNTY GOVERNMENT CENTER AT 166 INDUSTRIAL BLVD., GRAY, GA 31032. ENVELOPES SHOULD BE MARKED WITH "SEALED BID – WATER TREATMENT CHEMICALS."



INVITATION TO BID

The Jones County Board of Commissioners is accepting sealed bids for the purchase of water treatment chemicals on an annual contract. Sealed bids will be accepted until 3:00 PM on Wednesday June 19th, 2019 when they will be opened and read aloud in the Government Center Conference Room, 166 Industrial Blvd. Gray, GA 31032. Any questions should be directed to Leslie Faulk via e-mail at leslie.faulk@jonescountyga.org.

Specifications

GENERAL: It is the intention and purpose of this specification to provide for a basic purchase of Water Treatment Chemicals with a guarantee bid price for a (12) month period. This contract will begin from acceptance of the award and shall be in effect for (12) months. The contracts, if awarded, will be on a lump sum basis or individual item basis, whichever is found to be in the best interest of Jones County. Although bidders are encouraged to submit pricing for all chemicals in this bid document, they are not required to submit pricing for each chemical specified below.

CHEMICAL STANDARDS: All Chemicals shall be in accordance with AWWA latest revisions and certified for conformance with NSF Standard 60. Chemicals proposed by bidders shall be the same as those specified on the MSDS sheets included in this bid document.

QUANTITIES: Jones County Water Department shall not be required to purchase any minimum amount from the Water Treatment Chemical Contract during the contract period. Quantities ordered will be based on the needs of the Jones County Water Department and will be priced per contract pricing. The approximate quantities provided below are for informational purposes only and are in no way intended to represent actual minimum or maximum procurements.

RENEWAL: The successful bidder could be allowed TWO (2) one year annual renewals. All previous terms and conditions would apply. Price adjustments maybe proposed at the time of renewal. A letter requesting renewal of the contract and pricing must be received 60 days prior the end of the contract term. Jones County Water Department has the right to accept or reject the renewal and pricing and may use the Consumer Price Index (CPI) for evaluation purposes as well as previous bids received. Should Jones County not accept the proposed renewal, Jones County would send the Water Treatment Chemicals out for a new bid.

DELIVERY: Delivery locations will be specified at the time of order placement to one of the following:

Griswoldville Site

GPS Coordinates: 32.876558, -83.531411

Henderson Site

GPS Coordinates: 32.867921, -83.488959

Largo Site

GPS Coordinates: 32.864621, -83.538657

Masseyville Site

GPS Coordinates: 32.854066, -83.535463

Haddock Site #1

GPS Coordinates: 33.033451, -83.429912



Haddock Site #2
GPS Coordinates: 33.035294, -83.418223

Haddock Site #3
GPS Coordinates: 33.036570, -83.422197

It shall be the responsibility of the vendor to unload chemicals and place in the designated locations.

The table below describes the chemicals to be provided and the locations they would typically be delivered to:

<u>Item #</u>	<u>Description</u>	<u>Form</u>	<u>Packaging</u>	<u>Delivery Location</u>
1	AQUA MAG Sodium Phosphate Solution	Liquid	Pumped from Truck to Tank	Griswoldville, Henderson, Largo, Masseyville
2	Bleach, Sodium Hypochlorite - 12.5%	Liquid	Pumped from Truck to Tank	Griswoldville, Henderson, Largo, Masseyville
3	Flouride - Hydroflourosilicic Acid (HFS) - 23%	Liquid	Pumped from Truck to Tank	Griswoldville, Henderson, Largo, Masseyville
4	40% Caustic Soda, Sodium Hydroxide	Liquid	Pumped from Truck to Tank	Griswoldville, Henderson, Largo, Masseyville
5	Sodium Flouride	Powder	55# Bags	Haddock Sites #1, #2, #3
6	Captor	Liquid	30 Gal. Drum	Masseyville

Vendor designate (driver or emergency response team) is responsible for spillage and clean up at the point of delivery. Driver or delivery personnel must be equipped with personal protective equipment (PPE) while loading/unloading material. Vendor shall be fully equipped and capable of performing all necessary delivery operations in a safe manner without assistance from Jones County.

There shall be no foreign materials evident in the delivered product. Jones County has the authority to reject material load if evidence of foreign material is present. When vendor cannot abide by terms and conditions in fulfilling the contract, vendor must furnish service or goods from other sources at the contract price. If vendor delays in the above, Jones County reserves the right to purchase on the open market and charge vendor the difference between contract price and the purchase price.

MSDS: All shipments must contain material safety data sheets (MSDS) and packing lists that include a proper description, purchase order number, unit cost, and name of person placing the order.

ORDERS: Orders will be placed approximately SIX (6) times annually (BI Monthly). All orders must be accompanied by Jones County purchase order number. In the event that a purchase order number is not supplied with the order, Jones County assumes no responsibility for payment for the items ordered. All deliveries are to be FOB destination. All prices are to be bid as delivered FOB destination. No substitutions will be allowed.

INVENTORY: Vendor will provide Jones County Water Department with documentation stating items bid are readily available and in stock to support the estimated quantities.



DELIVERY TIME: Prompt delivery is crucial and will be taken in to consideration in the award of this bid. The bidder must state in writing delivery time from when order is placed. The successful bidder must have the capability to provide the chemicals to the County no later than 72 hours after receipt of a procurement request.

SITE VISIT: Vendor must do a site visit inspection to the locations to ensure delivery. During this bid process, vendors are encouraged to visit the sites listed in this document. These site visits may be arranged by contacting Jeffrey Pehlke, Water Superintendent, at (478) 993-5477.

TANKS, TOTES AND PUMPS: Our current vendor provides totes for all liquid chemicals. Any subsequent vendor would be required to provide totes, vessels, or other containers to store the product. Jones County shall not be charged deposits on any totes, vessels or other containers provided to store the products identified in this bid document. The current vendor also provides no-cost maintenance on chemical feed pumps, and any subsequent vendor would be required to perform these services at no cost.

ORIGIN OF MATERIAL: Vendor must state in writing DOMESTIC or FOREIGN on all materials bid, vendor must also have consent from Jones County Water Department to substitute any material before delivery is made.

TRAINING: vendor must provide annual training on chemical safety to include chlorine gas and use of a chlorine repair kit "A". Vendor must submit Training Plan to cover product details; manufacturing, transportation, and required PPE for safe handling per OSHA requirements.

SUBSTITUTIONS: Chemicals are to be provided to the County exactly as specified. Substitutes shall not be accepted. Additives such as antioxidants, plasticizers, flame retardants, colorants, extenders, UV absorbers, polymers, surfactants, desiccants, anti-caking agents, wetting agents, humectives, stabilizers, processing agents, etc. shall not be allowed unless the chemical is usually and customarily sold with the addition of the additive. Any and all additives must be listed on the Material Safety Data Sheet (MSDS).

Terms and Conditions

- The County reserves the right to reject and or all bids or proposals, to waive technicalities, and to make a selection and final award as deemed to be in the best interest of the County.
- Provider selection will be based on the information contained in the bids, and incomplete or inaccurate information may result in disqualification of a proposal or a bidder.
- The Jones County Board of Commissioners reserves the right to accept or reject any or all bids, to solicit additional bids, or to amend or revise bid documents.
- Bidders are required to submit three references from projects similar in size and cost that have been completed in the past 5 years.
- The proposal submitted by each proposed vendor will be treated as best and final. There will be no opportunity to negotiate fees during the selection process.



- If you plan to use subcontractors to perform any of the work described above, please identify the subcontractors you plan to use and explain the role they would play in this project. Also provide 3 references for the subcontractor you plan to use.
- The County does not guarantee the purchase of any/all equipment.
- The County reserves the right to terminate any contract for this equipment and/or services for any of the following reasons:
 - a. If the equipment/service is not delivered/completed on an agreed-upon schedule.
 - b. If the equipment/services delivered is not the same equipment/services bid.
 - c. Receipt of substandard product/service.
 - d. Poor workmanship.



Bid Form

Checklist

- Contractor complies with insurance requirements
- Chemicals are identical to those specified in the attached MSDS sheets
- References attached
- Subcontractor information and references attached (if applicable)
- E-Verify Affidavit attached
- Application for Public Benefit attached

I understand that I will need to provide a certificate of insurance as outlined in the attached insurance requirements prior to beginning work.

I further understand that I will be required to submit the attached Prime and Subcontractor's Work Authorization Certification and affidavit verifying status for County Public Benefit Application (copy attached), prior to beginning work.

I certify that the bid below meets all specifications outlined in the bid documents:

Company: _____

Address: _____

Contact: _____ E-mail Address: _____

Phone: _____ Fax: _____

Signature of Company Official: _____

(Bid form continued on next page)



Bid Form (Page 2)

<u>Item #</u>	<u>Annual Estimated Quantity</u>	<u>UOM</u>	<u>Description</u>	<u>Form</u>	<u>Packaging</u>	<u>Delivery Location</u>	<u>Unit Price</u>	<u>Ext. Price</u>
1	2,223	Gal.	AQUA MAG Sodium Phosphate Solution	Liquid	Pumped from Truck to Tank	Griswoldville Henderson Largo Masseyville		
2	4,900	Gal.	Bleach, Sodium Hypochlorite - 12.5%	Liquid	Pumped from Truck to Tank	Griswoldville Henderson Largo Masseyville		
3	1,751	Gal.	Flouride - Hydroflourosilicic Acid (HFS) - 23%	Liquid	Pumped from Truck to Tank	Griswoldville Henderson Largo Masseyville		
4	14,303	Gal.	40% Caustic Soda, Sodium Hydroxide	Liquid	Pumped from Truck to Tank	Griswoldville Henderson Largo Masseyville		
5	413	Pounds	Sodium Flouride	Powder	55# Bags	Haddock Sites #1, #2, #3		
6	30	Gal.	Captor	Liquid	30 Gal. Drum	Masseyville		



References

Government/Company:

Contact Person:

Title:

Phone Number:

Project Description:

Date of Project:

Government/Company:

Contact Person:

Title:

Phone Number:

Project Description:

Date of Project:

Government/Company:

Contact Person:

Title:

Phone Number:

Project Description:

Date of Project:



Contractor Insurance Requirements

Contractor's Insurance Provisions: During the life of the contract and for such additional time as may be required, the contractor will provide, pay for, and maintain in full force and effect the insurance outlined here for coverage at not less than the prescribed minimum limits of liability, covering the contractor's activities, those of any and all subcontractors, or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable.

Certificate of Insurance: Before starting work, the contractor will give the owner a certificate of insurance completed by a duly authorized representative of their insurer certifying that at least the minimum coverage required here are in effect and specifying that the liability coverage are written on an occurrence form and that the coverage will not be canceled, non-renewed, or materially changed by endorsement or through issuance of other policy(ies) of insurance without 60 days advance written notice to:

Jones County Board of Commissioners
P. O. Box 1359
Gray, Ga. 31032

Failure of the owner to demand such certificate or other evidence of full compliance with these insurance requirements or failure of the owner to identify a deficiency from evidence provided will not be construed as a waiver of the contractor's obligation to maintain such insurance.

The acceptance of delivery by the owner of any certificate of insurance evidencing the required coverage and limits does not constitute approval or agreement by the owner that the insurance requirements have been met or that the insurance policies shown in the certificates of insurance are in compliance with the requirements.

If the contractor fails to maintain the insurance as set forth here, the owner will have the right, but not the obligation, to purchase said insurance at the contractor's expense. Alternately, the contractor's failure to maintain the required insurance may result in termination of this contract at owner's option.

Insurance Primary: All coverage required of the contractor will be primary over any insurance or self-insurance program carried by the owner.

No Reduction or Limit of Obligation: By requiring insurance, the owner does not represent that coverage and limits will necessarily be adequate to protect the contractor. Insurance affected or procured by the contractor will not reduce or limit the contractor's contractual obligation to indemnify and defend the owner for claims or suits which result from or are connected with the performance of this contract.

Duration of Coverage: All required coverage will be maintained without interruption during the entire term of this contract and following final acceptance of the property by the owner.

Subcontractor's Insurance: The contractor will cause each sub-contractor employed by contractor to purchase and maintain insurance of the types specified below. When requested by the owner, the contractor will furnish copies of certificates of insurance evidencing coverage for each subcontractor.



Insurance Limits and Coverage: To the extent applicable, the amounts and types of insurance will conform to the minimum terms, conditions, and coverage of Insurance Service Office (ISO) policies, forms, and endorsements.

If the contractor has any self-insured retentions, or deductible under any of the following minimum required coverage, the contractor must identify on the certificate of insurance the nature and amount of such self-insured retentions or deductible and provide satisfactory evidence of financial responsibility for such obligations. All self-insured retentions or deductible will be the contractor's sole responsibility.

Commercial General Liability: The contractor will maintain commercial general liability insurance covering all operations by or on behalf of the contractor on an occurrence basis against claims for personal injury (including bodily injury and death) and property damage (including loss of use). Such insurance will have these minimum limits and coverage:

Minimum limits: \$1,000,000 each occurrence
 \$2,000,000 general aggregate with dedicated limits per project site
 \$2,000,000 products and completed operations aggregate

Worker's Compensation: Contractor's that have employees, sub-contractors, helpers, assistants, or individuals providing assistance on the contract work will maintain workers' compensation covering them during the term of this contract.

Minimum limits: Workers' compensation –Statutory Limit
 Employer's liability:
 \$100,000 bodily injury for each accident
 \$100,000 bodily injury by disease for each employee
 \$500,000 bodily injury disease aggregate



Contractor Affidavit under O.C.G.A. § 13-10-91(b)(1)

By executing this affidavit, the undersigned contractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services on behalf of (Jones County) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned contractor will continue to use the federal work authorization program throughout the contract period and the undersigned contractor will contract for the physical performance of services in satisfaction of such contract only with subcontractors who present an affidavit to the contractor with the information required by O.C.G.A. § 13-10-91(b). Contractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Contractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ___, 201__ in _____(city), _____(state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 201__.

NOTARY PUBLIC

My Commission Expires:



Subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(3)

By executing this affidavit, the undersigned subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract with (_____ -name of contractor) on behalf of (Jones County) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the subcontractor with the information required by O.C.G.A. § 13-10-91(b). Additionally, the undersigned subcontractor will forward notice of the receipt of an affidavit from a sub-subcontractor to the contractor within five business days of receipt. If the undersigned subcontractor receives notice of receipt of an affidavit from any sub-subcontractor that has contracted with a sub-subcontractor to forward, within five business days of receipt, a copy of such notice to the contractor. Subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Subcontractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, __, 201__ in _____(city), _____(state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 201__.

NOTARY PUBLIC

My Commission Expires:



Sub-subcontractor Affidavit under O.C.G.A. § 13-10-91(b)(4)

By executing this affidavit, the undersigned sub-subcontractor verifies its compliance with O.C.G.A. § 13-10-91, stating affirmatively that the individual, firm or corporation which is engaged in the physical performance of services under a contract for

(_____ -name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract) and

(_____ name of contractor) on behalf of (Jones County) has registered with, is authorized to use and uses the federal work authorization program commonly known as E-Verify, or any subsequent replacement program, in accordance with the applicable provisions and deadlines established in O.C.G.A. § 13-10-91. Furthermore, the undersigned sub-subcontractor will continue to use the federal work authorization program throughout the contract period and the undersigned sub-subcontractor will contract for the physical performance of services in satisfaction of such contract only with sub-subcontractors who present an affidavit to the sub-subcontractor with the information required by O.C.G.A. § 13-10-91(b). The undersigned sub-subcontractor shall submit, at the time of such contract, this affidavit to (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract).

Additionally, the undersigned sub-subcontractor will forward notice of the receipt of any affidavit from a sub-subcontractor to (name of subcontractor or sub-subcontractor with whom such sub-subcontractor has privity of contract). Sub-subcontractor hereby attests that its federal work authorization user identification number and date of authorization are as follows:

Federal Work Authorization User Identification Number

Date of Authorization

Name of Sub-subcontractor

Name of Project

Name of Public Employer

I hereby declare under penalty of perjury that the foregoing is true and correct.

Executed on _____, ____, 201__ in _____(city), _____(state).

Signature of Authorized Officer or Agent

Printed Name and Title of Authorized Officer or Agent

SUBSCRIBED AND SWORN BEFORE ME
ON THIS THE _____ DAY OF _____, 201__.

NOTARY PUBLIC
My Commission Expires:



**Affidavit Verifying Status
County Public Benefit Application
Jones County Board of Commissioners**

By executing this affidavit under oath, as an applicant for a Jones County Georgia Business Occupation Tax Certificate, Alcohol License, Taxi Permit or other public benefit as referenced in O.C.G.A. Section 50-36-1, I am stating the following with respect to my application for a Jones County Business Occupation Tax Certificate, Alcohol License, Taxi Permit or other public benefit (circle one) for _____. [Name of natural person applying on behalf of individual, business, corporation, partnership, or other private entity]

1) _____ I am a United States citizen

OR

2) _____ I am a legal permanent resident 18 years of age or older or I am an otherwise qualified alien or non-immigrant under the Federal Immigration and Nationality Act 18 years of age or older and lawfully present in the United States.*

In making the above representation under oath, I understand that any person who knowingly and willfully makes a false, fictitious, or fraudulent statement or representation in an affidavit shall be guilty of a violation of Code Section 16-10-20 of the Official Code of Georgia.

Signature of Applicant:

Date

Printed Name:

SUBSCRIBED AND SWORN
BEFORE ME ON THIS THE

____ DAY OF _____, 20__

*

Alien Registration number for non-citizens

Notary Public _____

My Commission Expires: _____

***Note:** O.C.G.A. § 50-36-1(e)(2) requires that aliens under the federal Immigration and Nationality Act, Title 8 U.S.C., as amended, provide their alien registration number. Because legal permanent residents are included in the federal definition of "alien", legal permanent residents must also provide their alien registration number. Qualified aliens that do not have an alien registration number may supply another identifying number below:



OPTIONAL — FOR NON-BIDDERS ONLY

**JONES COUNTY BOARD OF COMMISSIONERS – PURCHASING DEPARTMENT
NO BID STATEMENT**

In an effort to make the procurement of goods and services for the County as competitive as possible, we are soliciting information from contractors and/or vendors who cannot bid. Your responsiveness and constructive comments will be appreciated. Completion of this form will assist us in evaluating factors which relate to the competitiveness of our bids. Please check any of the boxes below which may apply. Please explain any issues that you feel needs to be addressed.

- Specifications - Restrictive, too light", unclear, specialty item, geared toward one (1) brand or manufacturer only. *(Please explain in detail below).*
- Manufacturing - Unique item, production time for model has expired, etc.
- Bid Time - Insufficient time to properly respond to bid or proposal.
- Delivery Time - Specified delivery time cannot be met.
- Payment - Payment terms unacceptable. *(Please be specific)*
- Bonding - We are unable to meet bonding requirements.
- Insurance - We are unable to meet insurance requirements.
- Removal - Remove our firm from your bidders list for the particular commodity or service.
- Keep - Please keep our company on your bidders list for future reference.
- Project is: ____ / Too Large _____ / Too Small _____ / Site or Location is Too Distant
- Miscellaneous - Do not wish to bid, do not handle this type of item(s) or services, unable to compete, Contract clauses are unacceptable, etc. *(Please be specific)*
- Our company would only be interested in this project as a subcontractor or supplier.

VENDOR STATEMENT:

Bid Description: _____

Company Name: _____

Company Official Name: _____

Company Official Signature: _____

Telephone Number: _____

Email Address: _____

**JONES COUNTY BOARD OF COMMISSIONERS – PURCHASING DEPARTMENT
(478) 986-6405 x 161
leslie.faulk@jonescountyga.org**



SAFETY DATA SHEET

1. Identification

Product identifier	AQUA MAG® Blended Phosphate
Other means of identification	
SDS number	-
Recommended use	AQUA MAG® blended phosphate is the premier corrosion inhibitor and sequesterant for use in potable and industrial water systems.
Recommended restrictions	None known.
Manufacturer / Importer / Supplier / Distributor information	
Company name	CARUS CORPORATION
Address	315 Fifth Street, Peru, IL 61354, USA
Telephone	815 223-1500 - All other non-emergency inquiries about the product should be directed to the company
E-mail	salesmkt@caruscorporation.com
Website	www.caruscorporation.com
Contact person	Dr. Chithambarathanu Pillai
Emergency Telephone	For Hazardous Materials [or Dangerous Goods] Incidents ONLY (spill, leak, fire, exposure or accident), call CHEMTREC at CHEMTREC®, USA: 001 (800) 424-9300 CHEMTREC®, Mexico (Toll-Free - must be dialed from within country): 01-800-681-9531 CHEMTREC®, Other countries: 001 (703) 527-3887

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The mixture does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	Not classified.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Diphosphoric acid, disodium salt	7758-16-9	1 - 5

Composition comments All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation	Move to fresh air. Call a physician if symptoms develop or persist.
Skin contact	Wash off with soap and water. Get medical attention if irritation develops and persists.
Eye contact	Rinse with water. Get medical attention if irritation develops and persists.
Ingestion	Rinse mouth. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed	Direct contact with eyes may cause temporary irritation.
Indication of immediate medical attention and special treatment needed	Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂).
Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire.
Specific hazards arising from the chemical	During fire, gases hazardous to health may be formed.
Special protective equipment and precautions for firefighters	Self-contained breathing apparatus and full protective clothing must be worn in case of fire. Selection of respiratory protection for firefighting: follow the general fire precautions indicated in the workplace.
Fire-fighting equipment/instructions	Move containers from fire area if you can do so without risk.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Keep unnecessary personnel away. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water. Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
Environmental precautions	Never return spills in original containers for re-use. For waste disposal, see section 13 of the SDS. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling	Avoid inhalation and contact with skin and eyes. Wear appropriate personal protective equipment (See Section 8). Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store in original tightly closed container. Store away from incompatible materials.

8. Exposure controls/personal protection

Occupational exposure limits	No exposure limits noted for ingredient(s).
Biological limit values	No biological exposure limits noted for the ingredient(s).
Appropriate engineering controls	General ventilation normally adequate.
Individual protection measures, such as personal protective equipment	
Eye/face protection	If contact is likely, safety glasses with side shields are recommended.
Skin protection	
Hand protection	For prolonged or repeated skin contact use suitable protective gloves.
Other	Wear suitable protective clothing.
Respiratory protection	In case of inadequate ventilation or risk of inhalation of vapors, use suitable respiratory equipment.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Appearance	Colorless solution.
Physical state	Liquid.
Form	Liquid.
Color	Colorless.
Odor	None.

Odor threshold	Not available.
pH	1% solution = 6.0±0.5
Melting point/freezing point	< 32 °F (< 0 °C)
Initial boiling point and boiling range	Not available.
Flash point	Not available.
Evaporation rate	Not available.
Flammability (solid, gas)	Not available.
Upper/lower flammability or explosive limits	
Flammability limit - lower (%)	Not available.
Flammability limit - upper (%)	Not available.
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	Not available.
Vapor density	Not available.
Relative density	1.37±0.03 at 25°C
Solubility(ies)	
Solubility (water)	Completely soluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Hazardous polymerization will not occur.
Conditions to avoid	Contact with incompatible materials.
Incompatible materials	Strong oxidizing agents. Strong acids. Strong bases.
Hazardous decomposition products	No hazardous decomposition products are known.

11. Toxicological information

Information on likely routes of exposure

Ingestion	May cause discomfort if swallowed.
Inhalation	In high concentrations, vapors may be irritating to the respiratory system.
Skin contact	Prolonged or repeated skin contact may cause irritation.
Eye contact	May cause eye irritation on direct contact.

Symptoms related to the physical, chemical and toxicological characteristics	Direct contact with eyes may cause temporary irritation.
-------------------------------------------------------------------------------------	----------------------------------------------------------

Information on toxicological effects

Acute toxicity	May cause discomfort if swallowed.
Skin corrosion/irritation	Prolonged contact may cause dryness of the skin.
Serious eye damage/eye irritation	Direct contact with eyes may cause temporary irritation.

Respiratory or skin sensitization

Respiratory sensitization	No data available.
Skin sensitization	Not a skin sensitizer.

Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
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Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
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Reproductive toxicity	No data available.
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Specific target organ toxicity - single exposure No data available.

Specific target organ toxicity - repeated exposure No data available.

Aspiration hazard Not classified.

12. Ecological information

Ecotoxicity The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Components	Species	Test Results
Diphosphoric acid, disodium salt (CAS 7758-16-9)		
Aquatic		
Fish	LC50	Rainbow trout,donaldson trout (Oncorhynchus mykiss)
		840 mg/l, 96 hours

Persistence and degradability The product is not expected to be readily biodegradable.

Bioaccumulative potential No data available for this product.

Mobility in soil Not available.

Other adverse effects No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions Collect and reclaim or dispose in sealed containers at licensed waste disposal site.

Local disposal regulations Dispose in accordance with all applicable regulations.

Hazardous waste code The waste code should be assigned in discussion between the user, the producer and the waste disposal company.

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

15. Regulatory information

US federal regulations This product is not known to be a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories Immediate Hazard - No
Delayed Hazard - No
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.**US state regulations****US. Massachusetts RTK - Substance List**

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not listed.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Not listed.

International Inventories

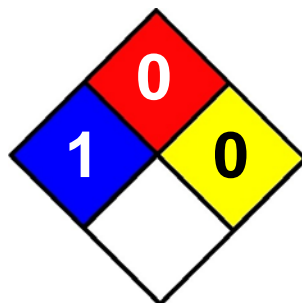
Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	27-March-2014
Revision date	-
Version #	01

NFPA Ratings**References**

HSDB® - Hazardous Substances Data Bank

Disclaimer

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SAFETY DATA SHEET

1. Identification

Product identifier	Sodium Hypchlorite, 10-15% Solution	
Other means of identification		
SDS number	AUC-004	
Synonyms	Aqua Guard Chlorinating Sanitizer * Aqua Guard Bleach * Aqua Guard Sodium Hypochlorite 10.5% * Aqua Guard Sodium Hypochlorite 12.5% * Sodium Hypochlorite * Liquid Bleach * Bleach * Hypo	
Recommended use	Swimming pool chemical, hard surface cleaner, water treatment, bleaching, textiles, cooling towers, laundry sanitizer, bleach solutions and agricultural/ aquacultural purposes.	
Recommended restrictions	None known.	
Manufacturer/Importer/Supplier/Distributor information		
Manufacturer		
Company name	Allied Universal Corporation	
Address	3901 N.W. 115th Avenue Miami, FL 33178 United States	
Telephone	General:	1-305-888-2623
	24-Hour alert:	1-786-522-0207
Website	www.allieduniversal.com	
E-mail	Not available.	
Contact person	Operations Department	
Emergency phone number	CHEMTREC	1-800-424-9300 (US/Canada) +01 703-527-3887 (International)
Supplier	Refer to Manufacturer	

2. Hazard(s) identification

Physical hazards	Corrosive to metals	Category 1
Health hazards	Skin corrosion/irritation	Category 1
	Serious eye damage/eye irritation	Category 1
	Specific target organ toxicity, single exposure	Category 3 respiratory tract irritation

Environmental hazards This mixture does not meet the classification criteria according to OSHA HazCom 2012.
OSHA defined hazards This mixture does not meet the classification criteria according to OSHA HazCom 2012.

Label elements



Signal word	Danger
Hazard statement	May be corrosive to metals. Causes severe skin burns and eye damage. May cause respiratory irritation.
Precautionary statement	
Prevention	Keep only in original container. Do not breathe mist. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection.

Response	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower. If inhaled: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician. Specific treatment (see this label). Wash contaminated clothing before reuse.
Storage	Store locked up. Store in a well-ventilated place. Keep container tightly closed. Store in corrosive resistant container with a resistant inner liner.
Disposal	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazard(s) not otherwise classified (HNO C)	No OSHA defined hazard classes. Other hazards which do not result in classification: Contact with most acids may liberate and toxic gas. Chronic skin contact with low concentrations may cause dermatitis.
Supplemental information	None.

3. Composition/information on ingredients

Mixtures

Chemical name	Common name and synonyms	CAS number	%
Sodium Hypochlorite	HYPOCHLORITE SOLUTION	7681-52-9	10-15.5
Sodium hydroxide	Caustic soda Lye Soda lye	1310-73-2	1-5
Other components below reportable levels			80-90

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret.

4. First-aid measures

Inhalation	Remove victim to fresh air and keep at rest in a position comfortable for breathing. If breathing stops, provide artificial respiration. Induce artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. If breathing is difficult, trained personnel should give oxygen. Call a physician or poison control center immediately.
Skin contact	Immediately flush skin with running water for at least 20 minutes. Take off immediately all contaminated clothing. Call a physician or poison control center immediately. Chemical burns must be treated by a physician. Wash contaminated clothing before reuse. Cover wound with sterile dressing. Do not rub area of contact. Leather and shoes that have been contaminated with the solution may need to be destroyed.
Eye contact	Immediately flush eyes with plenty of water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a physician or poison control center immediately. Take care not to rinse contaminated water into the unaffected eye or onto the face.
Ingestion	Call a physician or poison control center immediately. If swallowed: Rinse mouth. Do NOT induce vomiting. Never give anything by mouth to a victim who is unconscious or is having convulsions. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs.
Most important symptoms/effects, acute and delayed	Corrosive to the eyes and may cause severe damage including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring. Can cause severe respiratory irritation. Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.
Indication of immediate medical attention and special treatment needed	Immediate medical attention is required. Causes chemical burns. Treat symptomatically.
General information	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire-fighting measures

Suitable extinguishing media	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO ₂). Use media suitable to the surrounding fire such as water fog or fine spray, alcohol foams, carbon dioxide. Use water with caution. Contact with water will generate considerable heat.
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Unsuitable extinguishing media	Do not use water jet as an extinguisher, as this will spread the fire. Do not use dry chemical extinguishing agents that contain ammonium compounds. Use chemical extinguishing agents with caution. Some chemical extinguishing agents may react with this material.
Specific hazards arising from the chemical	Not considered flammable. Vapors are heavier than air and may spread along floors. Contact with most metals will generate flammable hydrogen gas. Contact with water will generate considerable heat. Reacts violently with a wide variety of organic and inorganic chemicals including alcohol, carbides, chlorates, picrates, nitrates and metals. Toxic fumes, gases or vapors may evolve on burning.
Special protective equipment and precautions for firefighters	Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. A full-body chemical resistant suit should be worn.
Fire fighting equipment/instructions	Fight fire with normal precautions from a reasonable distance. Evacuate the area promptly. Move containers from fire area if you can do so without risk. Use water spray to cool unopened containers. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.
Specific methods	Use standard firefighting procedures and consider the hazards of other involved materials.
General fire hazards	Vapors are heavier than air and may spread along floors.
Hazardous combustion products	Hydrogen gas. Hydrogen chloride. Chlorine. Oxygen. Sodium oxides.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	Immediately evacuate personnel to safe areas. Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Keep out of low areas. Wear appropriate protective equipment and clothing during clean-up. Do not breathe mist or vapor. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ventilate closed spaces before entering them. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
Methods and materials for containment and cleaning up	Ventilate the area. Remove sources of ignition. Stop leak if you can do so without risk. Absorb spillage to prevent material damage. Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal. Use water spray to reduce vapors or divert vapor cloud drift. Prevent entry into waterways, sewers, basements or confined areas. Remove with vacuum trucks or pump to storage/salvage vessels. Contain and absorb spilled liquid with non-combustible, inert absorbent material (e.g. sand). Small spills can be neutralized by covering with a reducing agent, such as Sodium thiosulfate or Sodium sulphite. If not recoverable, dilute with water or flush to holding area and neutralize.
Environmental precautions	Never return spills to original containers for re-use. Contact the proper local authorities. Contaminated absorbent material may pose the same hazards as the spilled product. For waste disposal, see Section 13. Contact local authorities in case of spillage to drain/aquatic environment. Avoid discharge into drains, water courses or onto the ground.

7. Handling and storage

Precautions for safe handling	Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. Label containers appropriately. When using, do not eat, drink or smoke. Do not taste or swallow. Do not get in eyes, on skin, on clothing. Wash thoroughly after handling. Observe good industrial hygiene practices.
Conditions for safe storage, including any incompatibilities	Store locked up. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Avoid ultraviolet (UV) light sources. Inspect periodically for damage or leaks. Store in corrosive resistant container with a resistant inner liner. Store in original tightly closed container. Keep container tightly closed. Store in a well-ventilated place. Store away from and do not mix with incompatible materials such as acids, oxidizers, organics, reducing agents and all metals except titanium. Keep away from food, drink and animal feed-stuffs.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	PEL	2 mg/m ³

US. ACGIH Threshold Limit Values

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value
Sodium hydroxide (CAS 1310-73-2)	Ceiling	2 mg/m ³

US. Workplace Environmental Exposure Level (WEEL) Guides

Components	Type	Value
SODIUM HYPOCHLORITE (CAS 7681-52-9)	STEL	2 mg/m ³

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment**Eye/face protection**

Chemical goggles and face shield are recommended. Eye wash facilities and emergency shower must be available when handling this product.

Skin protection**Hand protection**

Wear appropriate chemical-resistant gloves. Advice should be sought from glove suppliers.

Other

Where contact is likely, wear chemical-resistant gloves, a chemical suit, rubber boots, and chemical safety goggles plus a face shield. Use of an impervious apron is recommended.

Respiratory protection

Chemical respirator with organic vapor cartridge and full facepiece. A NIOSH/MSHA approved air-purifying respirator with the appropriate chemical cartridges or a positive-pressure, air-supplied respirator may be used to reduce exposure. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134). Advice should be sought from respiratory protection specialists.

Thermal hazards

Wear appropriate thermal protective clothing, when necessary.

General hygiene considerations

When using, do not eat, drink or smoke. Do not breathe mist. Avoid contact with eyes, skin and clothing. Upon completion of work, wash hands before eating, drinking, smoking or use of toilet facilities. Remove soiled clothing and wash it thoroughly before reuse.

9. Physical and chemical properties**Appearance**

Clear yellow liquid.

Physical state

Liquid.

Form

Liquid.

Color

Clear to yellow.

Odor

Pungent. Chlorine-like.

Odor threshold

Not available.

pH

11 - 13

Melting point/freezing point

7.52 °F (-13.6 °C)

Initial boiling point and boiling range

> 104 °F (> 40 °C)

Flash point

Not Applicable

Evaporation rate

Not available.

Flammability (solid, gas)

Not applicable.

Upper/lower flammability or explosive limits**Flammability limit - lower (%)**

Not Applicable

Flammability limit - lower (%) temperature

Not Applicable

Flammability limit - upper (%)	Not Applicable
Flammability limit - upper (%) temperature	Not Applicable
Explosive limit - lower (%)	Not available.
Explosive limit - upper (%)	Not available.
Vapor pressure	12 mm Hg
Vapor density	Not available.
Relative density	Not available.
Solubility(ies)	
Solubility (water)	Soluble
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	Not available.
Decomposition temperature	Not available.
Viscosity	Not available.
Other information	
Density	1.18 g/cm ³
Molecular formula	NaOCl
Molecular weight	74.4
Specific gravity	1.18

10. Stability and reactivity

Reactivity	Contact with most metals will generate flammable hydrogen gas. Contact with water will generate considerable heat. Reacts with amines and ammonia compounds to form explosively unstable compounds. May be corrosive to metals. May be corrosive to: Aluminum, stainless steel, carbon steel, copper, bronze.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	Reacts vigorously or violently with many organic and inorganic chemicals such as: acids, acrolein, acrylonitrile, chlorinated hydrocarbons (e.g. 1,2 dichloroethylene), chlorine dioxide, maleic anhydride, nitroethane, nitroparaffins, 2-nitrophenol, nitropropane, phosphorus, potassium persulfate, and tetrahydrofuran (containing peroxides).
Conditions to avoid	Direct sources of heat. Avoid high temperatures. Direct sunlight. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Do not allow evaporation to dryness.
Incompatible materials	Metals. Strong oxidizing agents. Acids. Amines. Ammonia. Reducing agents. Nitrites. Organic compounds.
Hazardous decomposition products	None known, refer to hazardous combustion products in Section 5. In the event of fire the following can be released: Chlorine. Sodium chlorate.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Prolonged inhalation may be harmful. May cause irritation to the respiratory system. May cause severe irritation to the nose, throat, and respiratory tract.
Skin contact	Causes severe skin burns.
Eye contact	Causes serious eye damage.
Ingestion	Causes digestive tract burns. Ingestion may cause severe irritation of the mouth, the esophagus and the gastrointestinal tract.

Most important symptoms/effects, acute and delayed

Corrosive to the eyes and may cause severe damage including blindness. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Direct skin contact may cause corrosive skin burns, deep ulcerations and possibly permanent scarring. Can cause severe respiratory irritation. Symptoms may include coughing, choking and wheezing. Inhalation could result in pulmonary edema (fluid accumulation). Symptoms of pulmonary edema (chest pain, shortness of breath) may be delayed. May cause severe irritation and corrosive damage in the mouth, throat and stomach. Symptoms may include abdominal pain, vomiting, burns, perforations, bleeding and eventually death.

Information on toxicological effects

Acute toxicity Not expected to be hazardous by OSHA criteria. There is no available data for the product itself, only for the ingredients. See data for individual ingredient acute toxicity data.

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	No Data in Literature
<i>Inhalation</i>		
LC50	Rat	No Data in Literature
<i>Oral</i>		
LD50	Rat	No Data in Literature
Sodium Hypochlorite (CAS 7681-52-9)		
Acute		
<i>Dermal</i>		
LD50	Rabbit	> 10000 mg/kg
<i>Inhalation</i>		
LC50	Rat	> 5.25 mg/l/4h
<i>Oral</i>		
LD50	Rat	8910 mg/kg

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Hazardous by OSHA criteria. Skin corrosion/irritation -Category 1. Causes severe skin burns.
Serious eye damage/eye irritation	Hazardous by OSHA criteria. Serious eye damage/eye irritation - Category 1. Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	Not expected to be a respiratory sensitizer.
Skin sensitizer	Not expected to be hazardous by OSHA criteria. Not expected to be a skin sensitizer. May cause an allergic skin reaction (e.g. hives, rash) in some hypersensitive individuals.
Germ cell mutagenicity	Not expected to be mutagenic.
Carcinogenicity	This product is not considered to be a carcinogen by IARC, ACGIH, NTP, or OSHA.
IARC Monographs. Overall Evaluation of Carcinogenicity	
Sodium Hypochlorite (CAS 7681-52-9)	3 Not classifiable as to carcinogenicity to humans.
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)	
Not listed.	

Reproductive toxicity	This product is not expected to cause reproductive or developmental effects.
Specific target organ toxicity - single exposure	Hazardous by OSHA criteria. May cause respiratory irritation. Specific Target Organ Toxicity (STOT), Single Exposure, Category 3.
Specific target organ toxicity - repeated exposure	Not classified as a specific target organ toxicity -repeated exposure.
Aspiration toxicity	Not expected to be an aspiration hazard.
Chronic effects	Prolonged inhalation may be harmful. Chronic skin contact with low concentrations may cause dermatitis.

12. Ecological information

Ecotoxicity Because of the pH of this product, it would be expected to produce significant ecotoxicity upon exposure to aquatic organisms and aquatic systems.

Components	Species	Test Results
Sodium hydroxide (CAS 1310-73-2)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (Ceriodaphnia dubia) 40 mg/l, 48 hours

Components	Species	Test Results
Fish	LC50	Western mosquitofish (<i>Gambusia affinis</i>) 125 mg/l, 96 hours
Sodium Hypochlorite (CAS 7681-52-9)		
Aquatic		
<i>Acute</i>		
Crustacea	EC50	Water flea (<i>Daphnia magna</i>) 0.169 mg/l, 48 hours
Fish	LC50	Bluegill (<i>Lepomis macrochirus</i>) 0.58 mg/l, 96 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	Biodegradation is not applicable to inorganic substances.
Bioaccumulative potential	No accumulation in living organisms is expected due to high solubility and dissociation properties.
Mobility in soil	High water solubility indicates a high mobility in soil.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

UN number	UN1791
UN proper shipping name	HYPOCHLORITE SOLUTIONS (RQ = 100)
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Label(s)	8
Packing group	III
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Special provisions	IB3, N34, T4, TP2, TP24
Packaging exceptions	154
Packaging non bulk	203
Packaging bulk	241

IATA

UN number	UN1791
UN proper shipping name	HYPOCHLORITE SOLUTION
Transport hazard class(es)	
Class	8
Subsidiary risk	-
Packing group	III
Environmental hazards	NO
ERG Code	8L
Special precautions for user	Read safety instructions, SDS and emergency procedures before handling.
Other information	
Passenger and cargo aircraft	Allowed.
Cargo aircraft only	Allowed.

IMDG

UN number	UN1791
UN proper shipping name	HYPOCHLORITE SOLUTION

Transport hazard class(es)

Class 8

Subsidiary risk -

Packing group III

Environmental hazards

Marine pollutant No.

EmS F-A, S-B

Special precautions for user Read safety instructions, SDS and emergency procedures before handling.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not available.

DOT



IATA; IMDG



15. Regulatory information

US federal regulations

This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

All components are on the U.S. EPA TSCA Inventory List.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

CERCLA Hazardous Substance List (40 CFR 302.4)

Sodium hydroxide (CAS 1310-73-2) Listed.

Sodium Hypochlorite (CAS 7681-52-9) Listed.

SARA 304 Emergency release notification

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate Hazard - Yes

Delayed Hazard - No

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical No

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA)

Not regulated.

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Sodium hydroxide (CAS 1310-73-2)

Sodium Hypochlorite (CAS 7681-52-9)

US. New Jersey Worker and Community Right-to-Know Act

Sodium hydroxide (CAS 1310-73-2)

Sodium Hypochlorite (CAS 7681-52-9)

US. Pennsylvania Worker and Community Right-to-Know Law

Sodium hydroxide (CAS 1310-73-2)

Sodium Hypochlorite (CAS 7681-52-9)

US. Rhode Island RTK

Sodium hydroxide (CAS 1310-73-2)

Sodium Hypochlorite (CAS 7681-52-9)

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 01-06-2015

Version # 01

HMIS H: 3 F: 0 R: 1

NFPA H: 3 F: 0 R: 1



Certified to
NSF/ANSI 60

Maximum use level for Sodium hypochlorite under NSF/ANSI Standard 60 - Maximum use in potable water is 84 mg/L for 12.5% bleach and 100 mg/L for 10.5% bleach.

List of abbreviations

ACGIH: American Conference of Governmental Industrial Hygienists
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation and Liability Act of 1980
CFR: Code of Federal Regulations
DOT: Department of Transportation
DSL: Domestic Substance List
EC: European Community
EINECS: European Inventory of Existing Commercial chemical Substances
EPA: Environmental Protection Agency
EPCRA: Emergency Planning and Community Right-to-Know Act
HSDB® - Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IATA: International Air Transport Association
IBC: Intermediate Bulk Container
IMDG: International Maritime Dangerous Goods
LC: Lethal Concentration
LD: Lethal Dose
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organization for Economic Cooperation and Development
OSHA: Occupational Safety and Health Administration
PPE: Personal Protective Equipment
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TLV: Threshold Limit Values
TWA: Time Weighted Average

Prepared by: ICC The Compliance Center Inc. 1-888-442-9628
<http://www.thecompliancecenter.com>

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Bibliography

Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2014 (Chempendium, RTECS, HSDB, INCHEM)
European Chemicals Bureau, Existing Chemicals Work Area, EINECS Information System, 2014. Material Safety Data Sheet from manufacturer.
OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2014.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Identifier**Product Name:** Fluorosilicic Acid**Synonyms:** Hydrofluorosilicic Acid, Hexafluorosilicic Acid, Hydrosilicofluoric Acid**Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:****Product Use:** Various commercial and industrial uses**Manufacturer:****UNIMIN CORPORATION**

258 Elm Street

New Canaan, CT 06840

Emergency Telephone Number

(203) 966-8880

Telephone Number for Information

(203) 966-8880

SDS Date of Preparation/Revision: April 2014

SECTION 2: HAZARDS IDENTIFICATION

GHS/ Hazcom 2012 Classification:

Physical:	Health:	Environmental
Not Hazardous	Acute Toxicity Category 3 (Dermal) Acute Toxicity Category 4 (Oral, Inhalation) Skin Corrosion Category 1	Not Hazardous

GHS/Hazcom 2012 Label:

**DANGER!****Statements of Hazard**

Harmful if swallowed.

Toxic in contact with skin.

Harmful if inhaled

Causes severe skin burns and eye damage.

Response:

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with soap and water.

Wash contaminated clothing before reuse.

Immediately call a POISON CENTER or doctor.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.

Immediately call a POISON CENTER or doctor.

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

Immediately call a POISON CENTER or doctor.

Call a POISON CENTER or doctor.

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

Immediately call a POISON CENTER or doctor.

Storage:

Store locked up.

Disposal:

Dispose of contents/containers in accordance with local regulation

Prevention:

Do not breathe mist, vapors, or spray.

Wash exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Wear protective gloves, protective clothing, eye protection, and face protection.

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	Component	Percentage
7732-18-5	Water	74%
16961-83-4	Fluorosilicic Acid	10-30%
7647-01-0	Hydrochloric Acid	<3%
7664-39-3	Hydrofluoric Acid	<1%

SECTION 4: FIRST AID MEASURES

Gross Inhalation: Remove victim to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get immediate medical attention. Lung effects may be delayed – medical observation is recommended.

Skin Contact: Immediately remove all contaminated clothing and shoes. Flush skin thoroughly with water for at least 15 minutes. Launder clothing before reuse. Discard contaminated items, such as shoes, that cannot be decontaminated. Get immediate medical attention. Skin effects may be delayed.

Eye Contact: Flush the eyes immediately with large amounts of running water, lifting the upper and lower lids occasionally for at least 15 minutes. Get immediate medical attention.

Ingestion: If the victim is conscious, rinse mouth with water and give one glass of water or milk to drink. Do not induce vomiting. Do not give anything by mouth to an unconscious or convulsing person. Get immediate medical attention.

Most Important Symptoms and Effects, Both Acute and Delayed: Corrosive. May cause burns to the eyes and skin. Skin burns may not be apparent or painful for several hours. Inhalation of vapors or mists may cause severe mucous membrane and respiratory irritation with possible lung damage. May be harmful or fatal if swallowed. Effects of overexposure may be delayed. Chronic exposure may cause fluorosis with effects on the teeth and bones.

Indication of immediate medical attention and Special Treatment Needed: If any contact occurs, get immediate medical attention.

SECTION 5: FIREFIGHTING MEASURES

Suitable Extinguishing Media: This product will not burn but is compatible with all extinguishing media. Use any media that is appropriate for the surrounding fire.

Specific Hazards Arising from the Chemical:

Unusual Fire and Explosion Hazards: This product is a water solution and is not flammable. Thermal decomposition may yield flammable, corrosive and toxic gases. This product may react with metals to form flammable and explosive hydrogen gas.

Hazardous Combustion Products: Thermal decomposition yields hydrogen silica tetrafluoride and hydrogen fluoride gas.

Special Protective Equipment and Precautions for Fire-Fighters: Prevent contact with eyes, skin and clothing. Firefighters should wear self-contained breathing apparatus and full protective clothing.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective equipment.

Environmental Precautions: Report spills and releases as required to appropriate authorities.

Methods and Material for Containment/Cleanup: Ventilate area. Contain spill and collect with absorbent material and place in appropriate container for disposal. Flush spill area with water.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling: Avoid creating and breathing mists. Avoid breathing vapors. Prevent eye, skin and clothing contact. Wash thoroughly with soap and water after handling.

Use only with adequate ventilation. Maintain and use proper, clean protective equipment (See Section 8). Launder contaminated clothing before reuse. **WARN and TRAIN** employees in accordance with state and federal regulations.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS AND USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARDS AND OSHA PRECAUTIONS AND ANY OTHER APPLICABLE REGULATORY PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.

Conditions for Safe Storage, Including any Incompatibilities: Store in a cool, dry, well-ventilated area. Keep away from metals. Reaction with metals will generate flammable hydrogen gas.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Definitions:

MSHA means Mine Safety and Health Administration.

NIOSH means National Institute for Occupational Safety and Health.

OSHA means Occupational Safety and Health Administration.

PEL means OSHA Permissible Exposure Limit.

REL means the NIOSH Recommended Exposure Limit.

TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.

TWA means time-weighted average.

Fluorosilicic Acid: PEL – 2.5 mg/m³ TWA (as Fluorides)
TLV- 2.5 mg/m³ TWA (as Fluorides)
MSHA - 2.5 mg/m³ TWA (as Fluorides)

Hydrochloric Acid: PEL - 5 ppm Ceiling
TLV- 2 ppm Ceiling
MSHA - 5 ppm Ceiling

Hydrofluoric Acid: PEL – 3 ppm TWA
TLV- 0.5 ppm TWA, 2 ppm Ceiling skin (as F)
MSHA - 3 ppm TWA

Appropriate Engineering Controls: Use local exhaust as required to maintain exposures below applicable occupational exposure limits. See also ACGIH "Industrial Ventilation - A Manual for Recommended Practice" (current edition). Control of exposure must be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general or local exhaust ventilation and substitution of less toxic materials).

Personal Protective Equipment:

Respiratory Protection: When effective engineering controls are not feasible, or while they are being implemented, appropriate respiratory protection must be used. Use appropriate respiratory protection for respirable particulates based on

consideration of airborne workplace concentrations and duration of exposure arising from intended end use. Refer to the most recent government and local standards.

Gloves: Chemical resistant gloves recommended.

Eye Protection: Chemical safety goggles and/or face shield recommended.

Other Protective Equipment/Clothing: Chemical resistant clothing and boots as needed to prevent skin contact. A safety shower and eye wash should be available in the work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Form:	Liquid	Appearance:	Water white to straw yellow
Viscosity:	Not applicable	Odor:	Pungent odor
pH:	Not applicable	Odor Threshold:	Not applicable
Boiling Point/Range:	105.56°C / 222°F	Vapor Density:	Not applicable
Melting point/freezing point:	-20°C / -4°F	Evaporation Rate:	Not applicable
Flammability (solid, gas):	Water solution, will not burn	Partition coefficient (n-octanol/water):	Not applicable
Decomposition Temperature:	Non-combustible	Vapor Pressure:	218 mmHg @ 75°
Flash Point:	Not applicable	Relative Density:	1.223
Lower Explosion Limit:	Not applicable	Solubilities:	Completely soluble in water
Upper Explosion Limit:	Not applicable	Autoignition Temperature:	Non-combustible

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Reacts with metals to form flammable hydrogen gas.

Chemical Stability: This product is stable at normal temperatures.

Possibility of Hazardous Reactions: Contact with metals may form flammable hydrogen gas.

Conditions to Avoid: None

Incompatible Materials: Metals, glass, stoneware, alkali, strong concentrated acids.

Hazardous Decomposition Products: Thermal decomposition yields hydrogen silica tetrafluoride and hydrogen fluoride gas.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects

Potential Health Effects:

Inhalation: Inhalation of vapors or mists may cause severe irritation of the nose, throat and respiratory passages. High concentrations may cause lung damage (edema) with symptoms of chest pain and difficulty breathing. The effects may be delayed for several hours and are aggravated by physical exertion.

Skin Contact: May cause severe irritation and chemical burns. Burns may not be apparent for several hours.

Eye Contact: Contact may cause severe irritation or chemical burns with possible permanent damage.

Ingestion: Swallowing may cause irritation and burns to the mouth, throat and gastrointestinal tract with nausea, weakness and shock. Severe damage, which may be fatal, may occur.

Chronic Health Effects: Prolonged absorption of fluorides may result in fluorosis. Symptoms include changes in bone density (osteosclerosis), ossification of ligaments and mottling of the dental enamel.

Signs and Symptoms of Exposure: Overexposure to mists may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. Eye and skin contact may cause redness, burning, pain and swelling.

Acute Toxicity Values: Fluorosilicic Acid: LD50 oral rat 430 mg/kg
Hydrochloric Acid: LC50 Inhalation rat 3124 ppm/ 1 hour.
Hydrofluoric Acid: LC50 Inhalation rat 1276 ppm/1 hr

Skin Sensitization: Not a skin sensitizer in animals or humans.

Repeated Dose Toxicity: No specific data is available.

Carcinogenicity: None of the components of this product are listed as carcinogens or suspected carcinogens by IARC, NTP or OSHA.

Developmental / Reproductive Toxicity: No specific data is available.

Genetic Toxicity: No specific data is available.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity: Fluorosilicic Acid: Lepomis macrochirus 96hr LC50: 50 mg/L; Daphnia magna 48hr EC50: 270 mg/L
Hydrofluoric Acid: Oncorhynchus mykiss: 96hr LC50 51 mg/L; Daphnia magna 48hr EC50: 26-48 mg/L

Persistence and Degradability: This product is expected to be highly degradable.

Bioaccumulative Potential: Not expected to bioaccumulate.

Mobility in Soil: Not applicable.

Results of PBT and vPvB Assessment: None required.

Other Adverse Effects: None known

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

This product, as produced, is classified as a hazardous waste under US EPA RCRA regulations – characteristic corrosive (D002). Dispose in accordance with all applicable local, state/provincial and federal regulations. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

SECTION 14: TRANSPORT INFORMATION

U.S. DOT HAZARD CLASSIFICATION

Proper Shipping Name: Fluorosilicic Acid

Technical Name: N/A

UN Number: UN1778

Hazard Class/Packing Group: 8, 11
Labels Required: Corrosive
DOT Packaging Requirements: 173.202, 173.242
Exceptions: None

SECTION 15: REGULATORY INFORMATION

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting: Acute health

SARA 313 This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under the SARA Section 313 (40 CFR 372): Hydrochloric Acid <3%, Hydrofluoric Acid <1%

CERCLA Section 103 Reportable Quantity: Product: 10,000 lbs. (Hydrofluoric Acid 100 lbs.)

California Proposition 65: This product does not contain substances regulated under California Proposition 65.

Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory or exempt from premanufacture notification requirements.

EU Inventory: All of the components of this product are listed on the EINECS inventory or exempt from notification requirements.

EU REACH Status: This substance is exempt from REACH registration.

Canadian Environmental Protection Act: All the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

Canadian WHMIS Classification: Not a controlled product

This SDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the SDS contains all of the information required by the CPR.

Japan METI: All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law.

Australian Inventory of Chemical Substances: All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

Australian National Occupational Health & Safety Commission Status: Hazardous according to the criteria of Australian National Occupational Health & Safety Commission – Corrosive C, Toxic T, R21/22 Harmful in contact with the skin and if swallowed. R23 Toxic by inhalation R35 Causes severe burns.

Korea: All of the components of this product are listed on the KECL inventory or exempt from notification requirements.

Philippines: All of the components of this product are listed on the PICCS inventory or exempt from notification requirements.

New Zealand: All of the components of this product are listed on the HSNO inventory or exempt from notification requirements.

China: All of the components of this product are listed on the IECSC inventory or exempt from notification requirements.

Taiwan: All of the components of this product are listed on the CSNN inventory or exempt from notification requirements.

16: OTHER INFORMATION

NFPA Hazard Rating: Health: 3 Fire: 0 Reactivity: 0

HMIS Hazard Rating: Health: 3 Fire: 0 Reactivity: 0

References:

Registry for Toxic Effects of Chemical Substances (RTECS), 2014
Patty's Industrial Hygiene and Toxicology
NTP Twelfth Report on Carcinogens, 2011
Hazardous Substances Data Bank (HSDB), 2014

SDS Date of Preparation/Revision: April 2014

Revision Summary: Conversion to US Hazcom 2012 format – GHS Classification added.

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process. The information set forth herein is based on technical data the Unimin Corporation believes reliable. It is intended for use by persons having technical skill and at their own discretion and risk. Since conditions of use are outside the control of Unimin Corporation, no warranties, expressed or implied, are made and no liability is assumed in connection with any use of this information. Any use of these data and information must be determined by the user to be in accordance with federal, state and local laws and regulations.



SAFETY DATA SHEET

Version 1

1. Identification of the Substance / Preparation and of the Company / Undertaking

Product Name: Sodium Hydroxide 30-50%
UN/ID No UN1824
Synonyms: Sodium Hydroxide; Caustic; Caustic Soda; Lye; Sodium Hydrate; Caustic Soda Membrane Grade 50%; Caustic Soda Diaphragm 30%, 35%, 40%, 50%
Molecular Weight: 40

Company Name:
Vertex Chemical Corporation, 11685 Manchester Road, St. Louis, Missouri 63131. (314) 471-0500

Emergency Telephone:
NATIONAL EMERGENCY RESPONSE CENTER:
1-800-424-8802
VERTEX CHEMICAL CORPORATION 314-471-0500
CHEMTREC (US): 1-800-424-9300
Call CHEMTREC only in the event of chemical emergencies involving a SPILL, LEAK, FIRE, EXPOSURE, or ACCIDENT involving chemicals.

Email:
vertexchem@vertexchem.com
www.vertexchemical.com

2. Hazards Identification

GHS - Classification

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 1 Category 1A
Serious eye damage/eye irritation	Category 1
Specific target organ toxicity (single exposure)	Category 1



Signal Word: Danger

Hazard Statements:
• Harmful if swallowed
• Causes severe skin burns and eye damage
• Causes damage to organs

Physical Hazards

Corrosive to metals	Category 1
---------------------	------------

- May be corrosive to metals



Precautionary Statements:

- P301 + P312 - IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
- P330 - Rinse mouth
- P312 - Call a POISON CENTER or doctor if you feel unwell
- P301 + P330 + P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting
- P303 + P361 + P353 - IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
- P363 - Wash contaminated clothing before reuse
- P304 + P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
- P280 - Wear protective gloves/protective clothing/eye protection/face protection
- P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
- P310 - Immediately call a POISON CENTER or doctor/physician
- P260 - Do not breathe dust/fume/gas/mist/vapors/spray
- P264 - Wash face, hands and any exposed skin thoroughly after handling
- P270 - Do not eat, drink or smoke when using this product
- P307 + P311 - IF exposed: Call a POISON CENTER or doctor/physician
- P405 - Store locked up
- P501 - Dispose of contents/ container to an approved waste disposal plant
- P334 - Immerse in cool water/wrap in wet bandages
- P390 - Absorb spillage to prevent material damage
- P406 - Store in corrosive resistant aluminum container with a resistant inliner

3. Composition / Information on Ingredients

Hazardous

Chemical Name	CAS No	Weight-%	EC No
Caustic soda	1310-73-2	30-50	215-185-5
Sodium chloride	7647-14-5	< 1.0	231-598-3
Sodium carbonate	497-19-8	< 0.2	207-838-8

Non-Hazardous

Chemical Name	CAS No	Weight-%	EC No
Water	7732-18-5	Balance	231-791-2

4. First Aid Measures

- General Advice:** Immediate medical attention is required.
- Eye Contact:** Immediate medical attention is required. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Do not rub affected area.
- Skin Contact:** Immediate medical attention is required. Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes.
- Inhalation:** Move to fresh air. Call a physician or poison control center immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

37719 Sodium Hydroxide 30-50%

Ingestion: Immediate medical attention is required. Do NOT induce vomiting. Drink plenty of water. Never give anything by mouth to an unconscious person. Remove from exposure, lie down. Clean mouth with water and drink afterwards plenty of water. Call a physician or poison control center immediately.

Note to Physicians: Product is a corrosive material. Use of gastric lavage or emesis is contraindicated. Possible perforation of stomach or esophagus should be investigated. Do not give chemical antidotes. Asphyxia from glottal edema may occur. Marked decrease in blood pressure may occur with moist rales, frothy sputum, and high pulse pressure. Treat symptomatically.

Self-protection of the First Aider: Use personal protective equipment as required. Avoid contact with skin, eyes or clothing.

5. Fire-fighting Measures

Flammable Properties:
Not considered to be a fire hazard

Explosive Properties:
No information available

Suitable Extinguishing Media:
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment

Unsuitable Extinguishing Media:
No information available

Specific Hazards Arising from the Chemical:
The product causes burns of eyes, skin and mucous membranes; Thermal decomposition can lead to release of irritating and toxic gases and vapors; In the event of fire and/or explosion do not breathe fumes

Protective Equipment and Precautions for Firefighters:
In the event of a fire, wear full protective clothing and MSHA/NIOSH (approved or equivalent) self-contained breathing apparatus with full facepiece operated in the pressure-demand or other positive pressure mode

6. Accidental Release Measures

Personal Precautions: Evacuate personnel to safe areas. Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Keep people away from and upwind of spill/leak.

Environmental Precautions: Do not allow into any sewer, on the ground or into any body of water. Should not be released into the environment. Prevent further leakage or spillage if safe to do so. Prevent product from entering drains.

Methods for Cleaning Up: Dike far ahead of liquid spill for later disposal. Soak up with inert absorbent material. Take up mechanically, placing in appropriate containers for disposal. Clean contaminated surface thoroughly. Prevent product from entering drains. Dam up. After cleaning, flush away traces with water.

Other Information: Not applicable.

7. Handling and Storage

Advice on Safe Handling: Use personal protective equipment as required. Avoid contact with skin, eyes or clothing. Use only with adequate ventilation. In case of insufficient ventilation, wear suitable respiratory equipment. Use only with adequate ventilation and in closed systems.

Storage Conditions: Keep container tightly closed in a dry and well-ventilated place. Keep out of the reach of children. Keep containers tightly closed in a dry, cool and well-ventilated place. Keep in properly labeled containers.

Incompatible Materials: Strong acids and bases; Oxidizing agents

8. Exposure Controls / Personal Protection

Chemical Name		ACGIH TLV		OSHA PEL		Ontario TWA
Caustic soda		Ceiling: 2 mg/m ³		2 mg/m ³ Ceiling 2 mg/m ³ TWA		CEV: 2 mg/m ³
Chemical Name	European Union	China	Japan	Korea	Australia	Taiwan
Caustic soda		Ceiling: 2 mg/m ³ Ceiling	Ceiling: 2 mg/m ³	Ceiling: 2 mg/m ³	2 mg/m ³ Peak	TWA: 2 mg/m ³

Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992)

Engineering Controls: Ensure adequate ventilation, especially in confined areas

Personal protective equipment (PPE)

Eye/Face Protection: Tight sealing safety goggles. Face protection shield.

Body Protection: Gloves made of plastic or rubber. Rubber boots. Suitable protective clothing. Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact. Wear chemical resistant clothing such as gloves, apron, boots or whole bodysuits made from neoprene, as appropriate.

General Hygiene Considerations:

When using do not eat, drink or smoke. Wash contaminated clothing before reuse. Keep away from food, drink and animal feeding stuffs. Contaminated work clothing should not be allowed out of the workplace. Regular cleaning of equipment, work area and clothing is recommended. Avoid contact with skin, eyes or clothing. Take off all contaminated clothing and wash it before reuse. Wear suitable gloves and eye/face protection.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State:	Liquid	Odor:	Odorless
Appearance:	No information available	Odor Threshold:	No information available
Color:	Colorless		
Property	Values	Remarks • Method	
pH:	14	No information available	
"Salt Out" Point (°F):		No information available	
Melting Point/Freezing Point:	14 °C / 57 °F		
Boiling Point/Boiling Range:	145 °C / 293 °F		
Flash Point:		No information available	
Evaporation Rate (BuAc=1):		No information available	
Flammability (solid, gas):		No information available	
Flammability Limits in Air:		No information available	
Upper Flammability Limit:			
Lower Flammability Limit:			
Vapor Pressure (mm Hg) :		No information available	
Vapor density (Air =1)		No information available	
Specific Gravity (H2O=1):	1.54		
Specific Gravity (2nd value):			
Water Solubility:		No information available	
Solubility(ies):		No information available	
Partition Coefficient (n-octanol/water)		No information available	
Autoignition Temperature:		No information available	
Decomposition Temperature:		No information available	
Kinematic Viscosity:		No information available	
Dynamic Viscosity:		No information available	
Oxidizing Properties:	No information available		
Explosive Properties:	No information available		

9.2. Other information

Softening Point:	No information available
Molecular Weight:	40
VOC Content(%):	No information available
Density:	No information available
Bulk Density:	No information available

10. Stability and Reactivity

Stability:	Stable under normal conditions of use and storage
Conditions to Avoid:	Exposure to air or moisture over prolonged periods
Incompatible Materials:	Strong acids and bases; Oxidizing agents
Hazardous Decomposition Products:	Thermal decomposition can lead to release of irritating and toxic gases and vapors
Possibility of Hazardous Reactions:	None under normal processing

11. Toxicological Information**Product Information**

Acute Toxicity: 0% of the mixture consists of ingredient(s) of unknown toxicity.

The following values are calculated based on chapter 3.1 of the GHS document

Chemical Name	Oral LD ₅₀ :	Dermal LD ₅₀ :	LC ₅₀ (Lethal Concentration):
Caustic soda		1350 mg/kg (Rabbit)	
Sodium chloride	3 g/kg (Rat)	10 g/kg (Rabbit)	42 g/m ³ (Rat) 1 h
Sodium carbonate	4090 mg/kg (Rat)		
Water	90 mL/kg (Rat)		

Chronic Toxicity:

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens as listed by OSHA, IARC or NTP

Target Organ Effects: Eyes, Respiratory system, Skin

12. Ecological Information**Ecotoxicity**

0% of the mixture consists of components(s) of unknown hazards to the aquatic environment

Chemical Name	Toxicity to algae	Toxicity to fish	Toxicity to daphnia and other aquatic invertebrates
Caustic soda		45.4: 96 h <i>Oncorhynchus mykiss</i> mg/L LC ₅₀ static	

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Sodium chloride		5560 - 6080: 96 h <i>Lepomis macrochirus</i> mg/L LC50 flow-through 6020 - 7070: 96 h <i>Pimephales promelas</i> mg/L LC50 static 12946: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 7050: 96 h <i>Pimephales promelas</i> mg/L LC50 semi-static 6420 - 6700: 96 h <i>Pimephales promelas</i> mg/L LC50 static 4747 - 7824: 96 h <i>Oncorhynchus mykiss</i> mg/L LC50 flow-through	1000: 48 h <i>Daphnia magna</i> mg/L EC50 340.7 - 469.2: 48 h <i>Daphnia magna</i> mg/L EC50 Static
Sodium carbonate	242: 120 h <i>Nitzschia</i> mg/L EC50	300: 96 h <i>Lepomis macrochirus</i> mg/L LC50 static 310 - 1220: 96 h <i>Pimephales promelas</i> mg/L LC50 static	265: 48 h <i>Daphnia magna</i> mg/L EC50

Persistence and Degradability: No information available.

Bioaccumulation: No information available.

Mobility: No information available.

13. Disposal Considerations

Waste from Residues/Unused Products: Disposal should be in accordance with applicable regional, national and local laws and regulations

Contaminated Packaging: Do not reuse container.

14. Transport Information

IATA

DOT

Proper shipping name	SODIUM HYDROXIDE SOLUTION
Hazard Class	8
UN/ID No	UN1824
Packing Group	PG II
Reportable Quantity (RQ)	1000 lbs
Description	UN1824, SODIUM HYDROXIDE SOLUTION, 8, PG II



TDG

MEX

15. Regulatory Information

International Inventories

37719 Sodium Hydroxide 30-50%

All of the components in the product are on the following Inventory lists: TSCA (United States);, Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Australia (AICS), South Korea (KECL);, China (IECSC), Philippines (PICCS), This product contains a substance not listed on international inventories - it is for research and development use only.

AICS	Complies
TSCA	Complies
DSL/NDSL	Complies
EINECS/ELINCS	Complies
ENCS	-
IECSC	Complies
KECL	Complies
PICCS	Complies

Chemical Name	AICS	TSCA	DSL	NDSL	EINECS	ELINCS	ENCS	IECSC	KECL	PICCS
Caustic soda	Listed	Listed	Listed	-	Listed	-	(2)-1972 (1)-410	Listed	KE-31487	Listed
Sodium chloride	Listed	Listed	Listed	-	Listed	-	(1)-236	Listed	KE-31387	Present
Sodium carbonate	Listed	Listed	Listed	-	Listed	-	(1)-164	Listed	KE-31380	Present
Water	Listed	Listed	Listed	-	Listed	-	-	Listed	KE-35400	Present

Inventory Legend

AICS - Australian Inventory of Chemical Substances

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

EINECS/ELINCS - European Inventory of Existing Chemical Substances/European List of Notified Chemical Substances

ENCS - Japan Existing and New Chemical Substances

IECSC - China Inventory of Existing Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

PICCS - Philippines Inventory of Chemicals and Chemical Substances

RESTRICTIONS - REACH TITLE VII No information available

US Federal Regulations

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material

Chemical Name	CERCLA Hazardous Substances and the Reportable Quantities	SARA Extremely Hazardous Substances EPCRA RQ	SARA Extremely Hazardous Substances TPQ
Caustic soda	1000 lb 454 kg	-	-

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372

SARA 311/312 Hazard Categories

Acute health hazard	Yes
Chronic health hazard	No
Fire hazard	No
Sudden release of pressure hazard	No
Reactive hazard	Yes

U.S. State Right-to-Know Regulations

37719 Sodium Hydroxide 30-50%

California Proposition 65:

This product does not contain any Proposition 65 chemicals

16. Other Information

National Fire Protection Association (NFPA) Ratings



NSF Certification



Certified to
NSF/ANSI 60

Maximum Use (mg/L unless otherwise indicated): 100

Prepared By: Adam Peterson, Rob Kelley, Andrew Morabu and Todd Bain from the HSE department.

Issue Date: 08-Jan-2013

Revision Date: 08-Jan-2013

Revision Note: MSDS converted to GHS SDS Format.

Disclaimer:

Vertex Chemical Corporation ("Vertex") expressly disclaims all express or implied warranties of merchantability and fitness for a particular purpose, with respect to the product or information provided herein.

All information appearing herein is based upon data obtained from the manufacturer and/or recognized technical sources. While the information is believed to be accurate, Vertex makes no representations as to its accuracy or sufficiency. Conditions of use are beyond Vertex's control, and, therefore, users are responsible to verify this data under their own operating conditions to determine whether the product is suitable for their particular purposes, and they assume all risks of their use, handling, and disposal of the product, or from the publication or use of, or reliance upon, information contained herein. This information relates only to the product designated herein, and does not relate to its use in combination with any other material or in any other process.

End of Safety Data Sheet

Material Safety Data Sheet

Sodium fluoride

ACC# 21230

Section 1 - Chemical Product and Company Identification

MSDS Name: Sodium fluoride**Catalog Numbers:** AC191270000, AC191270010, AC191270250, AC191275000, AC201290000, AC201290250, AC201295000, AC424320000, AC424320050, AC424325000, S299-100, S299-3, S299-500**Synonyms:** None.**Company Identification:**Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410**For information, call:** 201-796-7100**Emergency Number:** 201-796-7100**For CHEMTREC assistance, call:** 800-424-9300**For International CHEMTREC assistance, call:** 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
7681-49-4	Sodium fluoride	>97	231-667-8

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: white to off-white crystalline powder.

Danger! Causes irritation and possible burns by all routes of exposure. May be fatal if swallowed. Contact with acids liberates toxic gas. May cause lung damage. Moisture sensitive.**Target Organs:** Kidneys, heart, gastrointestinal system, skeletal structures, teeth, nerves, bone.**Potential Health Effects****Eye:** Causes eye irritation and possible burns. May cause chemical conjunctivitis and corneal damage.**Skin:** Contact with skin causes irritation and possible burns, especially if the skin is wet or moist. May cause skin rash (in milder cases), and cold and clammy skin with cyanosis or pale color.**Ingestion:** May be fatal if swallowed. Ingestion of large amounts of fluoride may cause salivation, nausea, vomiting, abdominal pain, fever, labored breathing. Exposure to fluoride compounds can result in systemic toxic effects on the heart, liver, and kidneys. It may also deplete calcium levels in the body leading to hypocalcemia and death. May cause irritation of the digestive tract and possible burns. May cause respiratory paralysis and cardiac arrest.**Inhalation:** May cause severe irritation of the respiratory tract with possible burns. Aspiration

may lead to pulmonary edema. Prolonged exposure to dusts, vapors, or mists may result in the perforation of the nasal septum. May cause systemic effects.

Chronic: Chronic inhalation and ingestion may cause chronic fluoride poisoning (fluorosis) characterized by weight loss, weakness, anemia, brittle bones, and stiff joints. Effects may be delayed. Chronic exposure may cause lung damage. Laboratory experiments have resulted in mutagenic effects. Chronic exposure to fluoride compounds may cause systemic toxicity. Skeletal effects may include bone brittleness, joint stiffness, teeth discoloration, tendon calcification, and osteosclerosis. Animal studies have reported the development of tumors.

Section 4 - First Aid Measures

Eyes: Get medical aid immediately. Do NOT allow victim to rub eyes or keep eyes closed. Extensive irrigation with water is required (at least 30 minutes).

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Destroy contaminated shoes.

Ingestion: Do not induce vomiting. If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If breathing is difficult, give oxygen. Do NOT use mouth-to-mouth resuscitation. If breathing has ceased apply artificial respiration using oxygen and a suitable mechanical device such as a bag and a mask.

Notes to Physician: Individuals who suffer from diabetes insipidus or some form of renal impairment may be at increased risk from the effects of fluoride. Due to delayed and persistent symptoms, observe patient closely for 48 hours. Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Material will not burn. During a fire, irritating and highly toxic gases may be generated by thermal decomposition or combustion.

Extinguishing Media: Use extinguishing media most appropriate for the surrounding fire. Do NOT get water inside containers. Use water spray, dry chemical, carbon dioxide, or appropriate foam.

Flash Point: Not available.

Autoignition Temperature: Not available.

Explosion Limits, Lower: Not available.

Upper: Not available.

NFPA Rating: (estimated) Health: 3; Flammability: 0; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Vacuum or sweep up material and place into a suitable disposal container. Do not flush into a sewer. Clean up spills immediately, observing precautions in the Protective Equipment section. Avoid generating dusty conditions. Provide ventilation. Do not get water inside containers.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Minimize dust generation and accumulation. Do not get in eyes, on skin, or on clothing. Keep container tightly closed. Do not ingest or inhale. Do not allow contact with water. Discard contaminated shoes. Keep from contact with moist air and steam.

Storage: Keep container closed when not in use. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Keep away from strong acids. Store protected from moisture. Store away from alkalis.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Sodium fluoride	2.5 mg/m ³ TWA (as F) (listed under Fluorides).	2.5 mg/m ³ TWA (as F) 250 mg/m ³ IDLH (as F)	2.5 mg/m ³ TWA (as dust) (listed under Fluorides). 2.5 mg/m ³ TWA (as F) (listed under Fluorides).

OSHA Vacated PELs: Sodium fluoride: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Crystalline powder

Appearance: white to off-white

Odor: odorless

pH: 7.4 (solution)

Vapor Pressure: 1 mm Hg @ 1077 deg C

Vapor Density: 1.45 (air=1)

Evaporation Rate: Not available.

Viscosity: Not available.

Boiling Point: 1704 deg C

Freezing/Melting Point: 993 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density:2.78 (water=1)

Molecular Formula:NaF

Molecular Weight:41.9882

Section 10 - Stability and Reactivity

Chemical Stability: Stable under normal temperatures and pressures. Moisture sensitive.

Conditions to Avoid: Incompatible materials, dust generation, moisture, excess heat.

Incompatibilities with Other Materials: Moisture, acids, alkalies, glass, oxidizing agents.

Hazardous Decomposition Products: Irritating and toxic fumes and gases, hydrogen fluoride gas, sodium oxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:

CAS# 7681-49-4: WB0350000

LD50/LC50:

CAS# 7681-49-4:

Draize test, rabbit, eye: 20 mg/24H Moderate;

Oral, mouse: LD50 = 44 mg/kg;

Oral, rabbit: LD50 = 200 mg/kg;

Oral, rat: LD50 = 31 mg/kg;

Carcinogenicity:

CAS# 7681-49-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: Oral, rat: TDLo = 617 mg/kg/2Y-C (Tumorigenic - equivocal tumorigenic agent by RTECS criteria - Endocrine - thyroid tumors and Musculoskeletal - tumors.; Oral, mouse: TDLo = 14 mg/kg/43W-C (Tumorigenic - equivocal tumorigenic agent by RTECS criteria - Skin and Appendages - tumors.

Teratogenicity: Oral, rat: TDLo = 240 mg/kg (female 11-14 day(s) after conception) Specific Developmental Abnormalities - musculoskeletal system.; Oral, rat: TDLo = 255 mg/kg (female 85 day(s) pre-mating) Specific Developmental Abnormalities - Central Nervous System.; Intraperitoneal, rat: TDLo = 9 mg/kg (female 10-18 day(s) after conception) Effects on Embryo or Fetus - extra-embryonic structures (e.g., placenta, umbilical cord) and Effects on Embryo or Fetus - fetal death.

Reproductive Effects: Oral, rat: TDLo = 150 mg/kg (male 30 day(s) pre-mating) Reproductive - Paternal Effects - spermatogenesis (incl. genetic material, sperm morphology, motility, and count) and Paternal Effects - testes, epididymis, sperm duct and Fertility - male fertility index (e.g. # males impregnating females per # males exposed to fertile nonpregnant females).; Oral, rat: TDLo = 221 mg/kg (female 1-20 day(s) after conception) Fertility - post-implantation mortality (e.g. dead and/or resorbed implants per total number of implants).

Mutagenicity: DNA Inhibition: Human, Fibroblast = 100 mg/L.; Cytogenetic Analysis: Human, Fibroblast = 20 mg/L.; Cytogenetic Analysis: Human, Lymphocyte = 20 mg/L.; Mutation in Mammalian Somatic Cells: Human, Lymphocyte = 440 mg/L.

Neurotoxicity: No information found

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Mosquito Fish: TLm = 419 ppm; 96 Hr; Fresh water Water flea Daphnia: LC50 = 340 mg/L; 48 Hr; Unspecified No data available.

Environmental: Toxic to aquatic and plant life. Soil can bind fluorides tightly if the pH is greater than 6.5. Fluorides can be damaging to plants when present in acid soils.

Physical: No information available.

Other: Dangerous to aquatic life in high concentrations.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	SODIUM FLUORIDE, SOLID	SODIUM FLUORIDE
Hazard Class:	6.1	6.1
UN Number:	UN1690	UN1690
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 7681-49-4 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

CAS# 7681-49-4: 1000 lb final RQ; 454 kg final RQ

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 7681-49-4: immediate, delayed.

Section 313 No chemicals are reportable under Section 313.

Clean Air Act:

This material does not contain any hazardous air pollutants.

This material does not contain any Class 1 Ozone depletors.

This material does not contain any Class 2 Ozone depletors.

Clean Water Act:

CAS# 7681-49-4 is listed as a Hazardous Substance under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 7681-49-4 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, (listed as Fluorides, inorganic), Minnesota, (listed as Fluorides), Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations**European Labeling in Accordance with EC Directives****Hazard Symbols:**

T

Risk Phrases:

R 25 Toxic if swallowed.

R 32 Contact with acids liberates very toxic gas.

R 36/38 Irritating to eyes and skin.

Safety Phrases:

S 22 Do not breathe dust.

S 36 Wear suitable protective clothing.

S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

WGK (Water Danger/Protection)

CAS# 7681-49-4: 1

Canada - DSL/NDSL

CAS# 7681-49-4 is listed on Canada's DSL List.

Canada - WHMIS

not available.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 7681-49-4 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 7/07/1999

Revision #6 Date: 2/15/2008

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantability or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall Fisher be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential or exemplary damages, howsoever arising, even if Fisher has been advised of the possibility of such damages.



Safety Data Sheet

Captor®

SDS Number: 2908 Revision: July 1, 2014

Section 1: IDENTIFICATION

1.1 Product Name: Captor®

1.2 Other Identification:

Chemical Family:	Inorganic salt solution
Formula:	CaS ₂ O ₃
Reach Pre-Registration #:	05-2115925358-40-0000

1.3 Recommended Use of Chemical: Water treatment

1.4 Manufacturer: Tessenderlo Kerley, Inc.
2255 N. 44th Street, Suite 300
Phoenix, Arizona 85008-3279
(602) 889-8300

Information:

1.5 Emergency Contact: Tessenderlo Kerley, Inc. (800) 877-1737
CHEMTREC (800) 424-9300, Domestic
(703) 527-3887, International

Section 2: HAZARD(S) IDENTIFICATION

2.1 Hazard Classification:

Health	None
Physical	None

2.2 Signal Word: Not Applicable

2.2.1 Hazard Statement(s): Not Applicable

2.2.2 Symbol(s): Not Applicable

2.2.3 Precautionary Statement(s): Avoid contact with eyes.
Use/store in cool, well ventilated areas.
Avoid prolonged/repeated breathing of vapors.
Avoid prolonged/repeated contact with the skin.
Keep away from any sources of heat or flames.
Store totes or small containers out of direct sunlight.
Wear protective apron, gloves and eye and face protection.

Do not allow release to aquatic waterways.

2.3 Unclassified Hazard(s): None

2.4 Unknown Toxicity Ingredient: None

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Chemical Ingredients: (See Section 8 for exposure guidelines)

Chemical	Synonym Common Name	CAS No.	EINECS No.	% by Wt.
Thiosulfuric acid (H ₂ S ₂ O ₃), calcium salt	Calcium thiosulfate	10124-41-1	233-333-7	20 - 30
Water	Water	7732-18-5	231-791-2	70 - 80

Section 4: FIRST AID MEASURES

4.1 Symptoms/Effects:

Acute: Eye contact may cause eye irritation. Repeated or prolonged skin contact may cause skin irritation. Ingestion may irritate the gastrointestinal tract.

Chronic: No known chronic effects.

4.2 Eyes: Immediately flush with large quantities of water for 15 minutes. Hold eyelids apart during irrigation to insure thorough flushing of the entire area of the eye and lids. Obtain medical attention if irritation occurs.

4.3 Skin: Immediately flush with large quantities of water. Remove contaminated clothing under a safety shower. Obtain medical attention if irritation occurs.

4.4 Ingestion: If victim is conscious, give 2 to 4 glasses of water and induce vomiting by touching finger to back of throat. Obtain medical attention.

4.5 Inhalation: Remove victim from contaminated atmosphere. If breathing is labored, administer oxygen. If breathing has ceased, clear airway and start CPR.

Section 5: FIRE FIGHTING MEASURES

5.1 Flammable Properties: (See Section 9, for additional flammable properties)

Heating this product to dryness will cause the release of oxides of sulfur.

NFPA: **Health - 0** **Flammability - 0** **Reactivity - 0**

5.2 Extinguishing Media:

5.2.1 Suitable Extinguishing Media: Not flammable, use media suitable for combustibles involved in fire.

5.2.2 Unsuitable Extinguishing Media: None known

5.3 Protection of Firefighters:**5.3.1 Specific Hazards Arising from the Chemical:**

Physical Hazards: Heating (flames) of closed or sealed containers may cause violent rupture of containers due to thermal expansion of compressed gases.

Chemical Hazards: Heating causes release of oxides of sulfur. Sulfur dioxide is highly irritating to the eyes, respiratory tract and moist skin.

5.3.2 Protective Equipment and Precautions for Firefighters:

Firefighters should wear self-contained breathing apparatus (SCBA) and full fire-fighting turnout gear. Keep containers/storage vessels in fire area cooled with water spray.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal Precautions: Use personal protective equipment specified in Section 8. Isolate the hazard area and deny entry to unnecessary, untrained and unprotected personnel.

6.2 Environmental Precautions:

Large quantities should be kept out of "waters of the United States" because of potential aquatic toxicity (See Section 12).

6.3 Methods of Containment:

Small Release: Confine and absorb small releases with sand, earth or other inert absorbent.

Large Release: Shut off release if safe to do so. Dike spill area with earth, sand or other inert absorbents to prevent runoff into surface waterways (potential aquatic toxicity).

6.4 Methods for Cleanup:

Small Release: For small areas shovel up the absorbed material and place in drums for disposal as a chemical waste.

Large Release: Recover as much of the spilled product as possible using portable pump and hoses. Treat remaining material as a small release (above).

Section 7: HANDLING and STORAGE

7.1 Handling: Avoid contact with eyes. Use only in a well ventilated area. Wash thoroughly after handling product. Avoid prolonged or repeated contact with the skin.

7.2 Storage: Store in well ventilated areas. Do not store combustibles in the area of storage vessels. Keep away from any sources of heat or flame. Store totes and smaller containers out of direct sunlight at moderate temperatures. (See Section 10.5 for materials of construction).

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Exposure Guidelines:

Chemical	OSHA PELs		ACGIH TLVs	
	TWA	STEL	TWA	STEL
Not Applicable				

8.2 Engineering Controls: None

8.3 Personal Protective Equipment (PPE):

8.3.1 Eye/Face Protection: Chemical goggles and a full face shield.

- 8.3.2 Skin Protection:** Neoprene rubber gloves and apron should be worn to prevent repeated or prolonged contact with the liquid. Wash contaminated clothing prior to reuse.
- 8.3.3 Respiratory Protection:** None required. If conditions exist where mist may be created, a NIOSH/MSHA approved mist respirator should be worn.
- 8.3.4 Hygiene Considerations:** There are no known hazards associated with this product when used as recommended, however common good industrial hygiene practices should be followed, such as washing thoroughly after handling and before eating or drinking.

Section 9: PHYSICAL and CHEMICAL PROPERTIES

9.1 Appearance:	Colorless liquid
9.2 Odor:	Fresh concrete to no odor at all
9.3 Odor Threshold:	Not determined
9.4 pH:	6.5 – 8.0
9.5 Melting Point/Freezing Point:	Salt out temperature is 32°F (<i>Typical</i>)
9.6 Boiling Point:	100°C (212°F) with decomposition
9.7 Flash Point:	Not applicable
9.8 Evaporation Rate:	Not applicable
9.9 Flammability:	Not applicable
9.10 Upper/Lower Flammability Limits:	Not applicable
9.11 Vapor Pressure:	37mm Hg @ 100°F
9.12 Vapor Density:	Same as water
9.13 Relative Density:	1.25 – 1.26 (10.4 – 10.5 Lbs/gal) (<i>Typical</i>)
9.14 Solubility:	Complete
9.15 Partition Coefficient:	Data not available
9.16 Auto-Ignition Temperature:	Not applicable
9.17 Decomposition Temperature:	Data not available
9.18 Viscosity:	2.11 cSt @ 25°C

Section 10: STABILITY and REACTIVITY

- 10.1 Reactivity:** Avoid interaction with heat, flames, oxidizers or acids.
- 10.2 Chemical Reactivity:** This is a stable product under normal temperatures, 60 – 120°F (15 – 49°C).
- 10.3 Possibility of Hazardous Reactions:**
See Section 10.5, below.
- 10.4 Conditions to Avoid:** Heating above 120°F (49°C)

10.5 Incompatible Materials: Strong oxidizers such as nitrates, nitrites or chlorates can cause explosive mixtures if heated to dryness. Acids will cause the release of sulfur dioxide, a severe respiratory hazard. The following materials of construction are not compatible with calcium thiosulfate solutions; carbon steel, copper or its alloys (brass, bronze) or galvanized steel.

10.6 Hazardous Decomposition Products:

Calcium oxide and oxides of sulfur. Sulfur dioxide is a severe respiratory irritant.

Section 11: TOXICOLOGICAL INFORMATION

11.1 Oral: Oral Rat (female) LD₅₀: > 2,000 mg/Kg (OECD 425)

Interperitoneal Rat LD_{LO}: 573.mg/Kg

Intravenous Rat LD_{LO}: 344 mg/Kg

Intraperitoneal Mouse LD₅₀: 115 mg/Kg

11.2 Dermal: Data not available

11.3 Inhalation: Data not available

11.4 Eye: Data not available

11.5 Chronic/Carcinogenicity: Not listed in NTP, IARC or by OSHA

11.6 Teratology: Data not available

11.7 Reproduction: Data not available

11.8 Mutagenicity: Data not available

Section 12: ECOLOGICAL INFORMATION

12.1 Ecotoxicity: Data not available.

12.2 Persistence & Degradability: Data not available.

12.3 Bioaccumulative Potential: Data not available.

12.4 Mobility in Soil: Data not available.

12.5 Other Adverse Effects: Data not available.

Section 13: DISPOSAL CONSIDERATIONS

Consult federal, state and local regulations for disposal regulations.

Section 14: TRANSPORT INFORMATION

14.1 Basic Shipping Description:

14.1.1 Proper Shipping Name:	Calcium thiosulfate solution (Not regulated by DOT)
14.1.2 Hazard Classes:	Not applicable
14.1.3 Identification Number:	Not applicable
14.1.4 Packing Group:	Not applicable
14.1.5 Hazardous Substance:	No
14.1.6 Marine Pollutant:	No

14.2 Additional Information:

14.2.1 Other DOT Requirements:

14.2.1.1 Reportable Quantity:	Not applicable
14.2.1.2 Placard(s):	Not applicable
14.2.1.3 Label(s):	Not applicable

14.2.2 USCG Classification: Class 43, Misc. water solutions Chris Code: unknown

14.2.3 International Transportation:

14.2.3.1 IMO:	Non-hazardous under IMO regulations
14.2.3.2 IATA:	Non-hazardous under IATA regulations
14.2.3.3 TDG (Canada):	Non-hazardous under TDG regulations
14.2.3.4 ADR (Europe):	Non-hazardous under ADR regulations
14.2.3.5 ADG (Australia):	Non-hazardous under ADG regulations

14.2.4 Emergency Response Guide: Not applicable

14.2.5 ERAP (Canada): Not applicable

14.2.6 Special Precautions: None

Section 15: REGULATORY INFORMATION

15.1 U.S. Federal Regulations:

15.1.1 OSHA: This product meets the criteria of the Federal OSHA Hazard Communication Standard (29 CFR 1910.1200).

15.1.2 TSCA: Product is contained in USEPA Toxic Substance Control Act Inventory

15.1.3 CERCLA: Reportable Quantity – Not applicable

15.1.4 SARA Title III:

15.1.4.1 Extremely Hazardous Substance (EHS): No

15.1.4.2 Section 312 (Tier II) Ratings:	Immediate (acute)	Yes
	Fire	No
	Sudden Release	No
	Reactivity	No
	Delayed (chronic)	No

15.1.4.3 Section 313 (FORM R): Not applicable

15.1.5 RCRA: Not applicable

15.1.6 CAA (Hazardous Air Pollutant/HAP): Not Applicable

15.2 International Regulations:**15.2.1 Canada:**

15.2.1.1 WHMIS: Not hazardous

15.2.1.2 DSL/NDL: Listed in DSL

15.3 State Regulations:

15.3.1 CA Proposition 65: No

Section 16: OTHER INFORMATION

REVISIONS: The entire SDS was reformatted to comply with the new Hazard Communication Standard dated March 26, 2012, by Regulatory Affairs of Tessenderlo Kerley, Inc.

The information above is believed to be accurate and represents the best information currently available to Tessenderlo Kerley, Inc. (TKI). No warranty of merchantability, fitness for any particular purpose, or any other warranty is expressed or is to be implied regarding the accuracy or completeness of this information, the results to be obtained from the use of this information or the product, the safety of this product, or the hazards related to its use. Users should make their own investigations to determine the suitability of the information for their particular purpose and on the condition that they assume the risk of their use thereof. TKI reserves the right to revise this Safety Data Sheet periodically as new information becomes available.